Issues in the Mortgage Market in the 1980's and 1990's

by James E. Pesando Feb. 1985

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ISSUES IN THE MORTGAGE MARKET IN THE 1980's AND 1990's

A Discussion Paper Prepared for the
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(i) Introduction

The purpose of this discussion paper is to identify the major issues that are likely to emerge in the mortgage market in the 1980's and the 1990's. These issues will reflect future developments regarding the size of the federal government deficit, the volatility of both house prices and interest rates, and the prospect for renewed inflation. The central policy question is whether observed or projected outcomes are best viewed as the efficient market response to a continually evolving economic environment, or whether they signal the need for remedial government initiatives.

The major issues analyzed in this report are summarized below:

(1) the large federal government deficit, and the likelihood that real interest rates will remain at historically high levels for the foreseeable future;

(2) the recent decline in the importance of mortgages with high loan-to-value ratios, and the contributing role of both volatile house prices and volatile interest rates;

(3) the recent increase in mortgage insurance premiums as a consequence of prior underwriting losses experienced by both CMHC and MICC;

(4) the lower penetration of the mortgage market by institutional lenders, as evidenced by the rising proportion of new single-detached starts financed by other sources;

(5) the impact of financial deregulation; and

(6) the impact of the forecast decline in housing requirements suggested by current demographic projections.

1. Federal Government Deficits and High Real Interest Rates

The consensus view among economists is that large federal government deficits in both the United States and Canada are contributing to the very high level of real or inflation-adjusted interest rates that presently prevail in North America. These deficits contribute to high real interest rates in two ways. First, they increase the current and prospective demand for loanable funds, thereby exerting direct upward pressure on both short-term and long-term rates. Secondly, the large deficits create uncertainty as to how they will ultimately be financed. If they are ultimately monetized (i.e. financed by a more rapid rate of growth in the money supply), the consequence will be an acceleration in the rate of inflation. Because of this possibility, long-term interest rates at present contain a substantial risk premium. Further, the existence of large deficits allows perceived changes in the government's commitment to their reduction to exert a major impact on financial markets,

thereby contributing to the volatility of interest rates.

To put this analysis in perspective, a representative set of projections of interest rates, inflation and related macroeconmic variables for the period 1984 to 1995 are presented in Table 1.[1] Historical data on interest rates and inflation for the period 1954 to 1983 are presented in Table 2.

In the projected outlook, the federal government pursues a moderately restrictive fiscal policy and the deficit is gradually reduced. Real interest rates trend downward over the next 10 years, but remain high by historical standards until the 1990's. The real interest rate on 5-year conventional mortgages averages 7.26 percent for the period 1985 to 1990, compared to an historical average of 4.59 percent. These high real interest rates are likely to exert a depressing influence on the markets for both owner-occupied and rental housing. It should be emphasized, however, that real interest rates were abnormally low from the mid- to late-1970's. Although real mortgage rates at present <u>are</u> at historically high levels, it is misleading to compare them to the real rates that prevailed during much of the 1970's.

A dramatic reduction in the federal government deficit would serve to lower real interest rates relative to their projected levels. The failure to contain the deficit would raise them. In both cases, however, the results will be

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[1]These projections were prepared in November 1984 by the Policy and Economic Analysis Program, Institute for Policy Analysis, University of Toronto.

moderated by the fact that the level of real interest rates in Canada will be heavily influenced by the level of real interest rates in the United States. The latter are projected to remain high until the U.S. government brings its deficit under control.

At present, the prospect until the end of the decade is for a relatively modest rate of growth of real GNP, with unemployment rates projected to decline only slowly. A sharp cut in federal expenditures and/or a large increase in taxes would exert a depressing impact on the economy, and most macroeconomists would have serious reservations about recommending such a course of action. For this reason, the most relevant alternative scenario is one in which there is a change in the current policy mix, toward a more restrictive fiscal policy and toward a more expansionary monetary policy. The restrictive fiscal policy would be pursued with the objective of accelerating the pace of deficit reduction, and would be accompanied by a one-time easing of monetary policy so as not to retard economic growth. Such a change in the policy mix would cause real interest rates to fall by about 2 percent during the period 1985 to 1990.[2] This would be sufficient to bring

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[2]This observation is based on simulation experiments performed by the Policy and Economic Analysis Program of the Institute for Policy Analysis. Expenditure reductions by the federal government of $2.0 billion in 1985, $4.0 billion in 1986, $7.0 billion in 1987, $10 billion in 1988 and thereafter, all relative to the expenditures contained in the base projection, are twinned with a more expansionary monetary policy which keeps the same level of real GNP as in the base case.

real interest rates down to a level that is much closer to - but still above - their historical average. This change in policy mix would also involve a modest depreciation of the Canadian dollar against its U.S. counterpart.

On balance, it seems appropriate to assume that real interest rates will remain high by historical standards for at least another 5 years. The crucial policy question is whether this outlook justifies a government initiative to provide relief to homeowners and/or builders. If so, there remains the question of what form such relief should take.

A detailed analysis of policy options is beyond the scope of the present paper. Nonetheless, it is useful to highlight the three broad categories of policy response:

(1) provide tax relief to mortgage interest payments or some other subsidy, with full knowledge of the difficulty in withdrawing the subsidy when market conditions change;

(2) provide no subsidy, but facilitate the introduction of indexed mortgages which bear a fixed - and presumably lower - real interest rate;[3] and

(3) take no initiative, on the grounds that the efficient

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[3]The real interest rate is lower because the lender does not bear the risk associated with an uncertain future rate of inflation. It is likely that the real interest rate on indexed mortgages would be about 2 percent less the implicit real rate on conventional mortgages, if both were insured. The questions of borrower acceptance, the extent to which the inflation component of the lender's return would be deferred or paid currently, and the like would have to be addressed.

allocation of both financial and real capital requires that the interest sensitive sectors of the economy bear the brunt of high real interest rates.

2. The Decline in Mortgages with High Loan-to-Value Ratios

Historically, the CMHC has sought to improve the access of qualified borrowers to homeownership by providing them with access to high-ratio mortgage loans. Yet the CMHC has stopped insuring mortgages with loan-to-value ratios in excess of 90 percent, and the importance of very high-ratio mortgage loans has declined sharply.[4] It is important to note, however, that even in 1983 (the latest year for which data are available), 75.7 percent of NHA-financed new homes and 82.3 percent of NHA-financed existing homes had loan-to-value ratios between 80 and 90 percent.

Because of the acceleration in losses experienced by the Mortgage Insurance Fund, the CMHC chose to tighten its underwriting standards. Yet the demand for high-ratio mortgage loans has also fallen, for two main reasons:

(1) the inflation psychology of the late 1970's has been

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[4]The following summary data are illustrative.

Ratio of Loan to Lending Value (%) for New Housing Under the NHA

	0-75	75.1-90.0	90.1-95.0	95.1+
1968	11.9%	42.7%	36.9%	8.5%
1978	6.1%	15.6%	77.9%	0.4%
1983	15.6%	84.4%	0.0%	0.0%

broken, especially as it pertains to the housing market; and

(2) the uncertainty regarding the future level of mortgage interest rates has made many buyers reluctant to take on large mortgages, even if they can carry them at current mortgage rates.

Because mortgage interest payments are not tax deductible, the effective cost of home ownership is less if the household accumulates a large downpayment.[5] Potential buyers may weigh this consideration more heavily if they feel that inflation is being brought under control, and that house prices are likely to rise at only moderate rates in the foreseeable future.[6]

In short, it is useful to view the decline in very high-ratio mortgage loans as the byproduct of both demand and

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[5]Assume, for simplicity, that a household can both borrow and lend at 12%. If the household takes out a mortgage with a loan-to-value ratio of 100%, the cost of financing the home is the before-tax interest rate of 12%. At the other extreme, if the household is in the 50% tax bracket and finances the house purchase by drawing down accumulated savings, the opportunity cost of this finance is only 6%.

[6]Between August 1974 and July 1982, the percentage increase in house prices in most of the markets surveyed by the Royal Trust Company failed to match the rate of inflation. For the three-bedroom bungalow, the median price increase was 52.6%, compared to 111.2% for the consumer price index. For the two-story, four bedroom house, the median price increase was 52.7%. In only 14.5% of the markets did the price increase in the bungalows exceed the increase in the consumer price index. The corresponding figure for the two-story homes was even less, at 5.6%.

The beginning and end dates of this sample period correspond to a strong and a weak housing market, respectively. This is an important caveat. Nonetheless, the data provide no basis for policy-makers or households to premise their behaviour on the assumption that house prices will rise over the long run at a more rapid pace than the overall rate of inflation.

supply factors. These factors reflect an economic environment characterized by the increased volatility of both house prices and interest rates, as well as a sharp break in inflationary psychology. If the prospect were for renewed inflation and accelerating house prices, household demand for high-ratio mortgage loans would increase. Presumably, this would elicit an appropriate supply response. This is not to say that the price that direct lenders (in the form of premium mortgage rates on uninsured loans) or mortgage insurers would require for bearing this default risk would fall to the levels observed in the 1970's. This would occur only if mortgage lenders and insurers perceived that the risk of default had indeed subsided.

In the early 1980's, house prices in many markets followed a "boom and bust" pattern similar to that observed for other real assets, such as precious metals. There is no question that inflationary expectations were the driving force behind this cycle. If inflation remains low and if the federal government brings its deficit under control, as assumed in the macroeconomic projection outlined earlier, the likelihood is that the volatility of both house prices and interest rates will diminish. If this does occur, one might expect loan-to-value ratios to again increase.

3. Higher Mortgage Insurance Premiums

The CMHC sharply increased its insurance premiums for both owner-occupied and rental housing, effective 28 January 1985.

The increase, based on past claims experience, is steepest for those mortgages with the highest loan-to-value ratios. The increase is also greater for new than for existing homes, again reflecting past experience.[7] MICC has adopted the new rate structure, although MICC is prepared to offer lower rates for mortgages with shorter terms to maturity.

The decision by the CMHC and MICC to raise their insurance premiums occurs at a time when the market for mortgage insurance has contracted sharply. In 1979, 60.5 percent and 81.1 percent of new and existing homes, respectively, were insured.[8] In 1983, these figures had fallen to 26.5 percent and 29.6 percent. Because of its financial troubles, MICC's share of the market has declined significantly in recent years.

The sharp increase in premiums reflects the past underwriting losses experienced by the mortgage insurers. It reflects their belief that the risk of default has been substantially underestimated in the past, and hence that mortgage insurance has been substantially underpriced. Until the

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[7]For owner-occupied housing, the basic premium structure is as follows. (Bracketed figures represent the old insurance premiums.)

Loan-To-Value Ratio	New Homes	Existing Homes
Up to 75%	1.50% (1.00%)	1.00% (1.00%)
Up to 80%	2.00% (1.50%)	1.50% (1.50%)
Up to 85%	2.50% (1.50%)	2.00% (1.50%)
Up to 90%	3.00% (1.50%)	2.50% (1.50%)

[8]For new housing, the remainder includes all uninsured financing as well as mortgage free purchases. For new housing, the remainder includes only uninsured institutional financing.

volatility of both house prices and interest rates diminishes, mortgage lenders and insurers will demand greater compensation for bearing default risk. Borrowers taking out high-ratio mortgages will pay for this perceived increase in default risk, regardless of whether they opt for mortgage insurance or for uninsured loans with a commensurate premium in the mortgae rate.

Clearly, the higher premium rates will reduce the demand for mortgage insurance, and thus the demand for high-ratio mortgages on this account. The higher premium rates will also encourage borrowers, or builders on their behalf, to examine the alternatives to mortgage insurance. Builders, for example, may seek to arrange second mortgages for amounts in excess of 75 perceent of the purchase price of new homes, if the second mortgages can be obtained on more attractive terms. If the higher premiums charged by the mortgage insurers include a component to help them recoup losses on past insurance, borrowers may find that second mortgages are on average less expensive than mortgage insurance. An adverse selection problem may also exist. Borrowers (or builders) who are better credit risks may find it less expensive to arrange second mortgages, at least if second mortgage rates more accurately reflect the individual's (or builder's) credit risk.

Historically, the CMHC has used mortgage insurance to improve access to home ownership, to promote the construction of rental housing, to finance non-profit and cooperative housing, and to improve the supply of housing in remote areas and small

urban centres. The decision by the CMHC to move in the direction of a more risk-related premium structure thus raises more fundamental policy questions.

(1) Is the only role of public mortgage insurance to mimic the behaviour of a private insurer, and thus to link premiums as closely as possible to the likelihood of a future claim? If so, is there really a need for public mortgage insurance?

(2) Is the primary role of public mortgage insurance to subsidize the risk associated with high-ratio mortgages, thereby improving the access to homeownership of households that can afford only modest down-payments?

(3) Is the role of public mortgage insurance to provide subsidies, but only on a selective basis, perhaps to borrowers in remote areas or to non-profit or cooperative housing?

In general, there is great uncertainty regardng the role that the CMHC will choose to play, and hence how the mortgage insurance industry will evolve in the years ahead. At one extreme, the CMHC could stop selling mortgage insurance altogether. Mortgage insurance, if viable, would be "privatized". The CMHC might assume the role of a reinsurer, if the private sector is deemed to be incapable of underwriting catastrophic risk. To the extent that the CMHC wishes to subsidize targeted borrowers or targeted projects, this could

be accomplished with direct loans and/or by the CMHC retaining a residual role in the insurance market. At the other extreme, the CMHC could continue to sell mortgage insurance, at its higher premiums, with the recognition that at least some of its insured borrowers still receive implicit subsidies. Indeed, influenced by the extreme volatility of house prices in British Columbia and Alberta, the CMHC could take the initiative of insuring mortgages that have become - as a result of declining house prices - high-ratio loans.

The question of whether there exists a viable market for mortgage insurance should also be raised. The underwriting losses experienced by both the CMHC and MICC reflect the underpricing of insurance premiums in the past, together with underwriting standards that - with the advantage of hindsight - appear to have been too lax. With higher premiums now in place, the writing of new insurance may well be a profitable activity. If so, there may be an incentive for new firms to enter the industry, in spite of the underwriting losses experienced by the CMHC and the MICC on their past business. On the other hand, there is likely to be a further drop in the demand for mortgage insurance now that premiums have been raised. This decline could be intensified if the requirement that lending institutions insure mortgages with loan-to-value ratios in excess of 75 percent is dropped. In the United States, mortgage insurance is central to the operation of the secondary mortgage market. Yet, in part because of the nationwide activities of

many financial institutions, there is still no evidence that an active secondary market is central to the efficient operation of the Canadian mortgage market. Without mortgage insurance, it is unlikely that federal proposals for mortgage-backed securities will get off the ground.

4. The Lower Penetration of the Mortgage Market by Institutional Lenders

Beginning in 1980, there has been a sharp rise in the fraction of single-detached starts financed by sources other than public and conventional mortgages. These non-traditional sources of finance include personal loans, savings, proceeds from the sale of a former home, and mortgages from individuals. The fraction of single-detached starts financed from these sources rose from 31.0 percent in 1979 to 51.2 percent in 1983, having reached a peak of 55.6 percent in 1981.

A number of questions arise. Is this the beginning of a trend away from the traditional dependence of housing finance on public and conventional mortgages? Does it provide evidence of the de facto deregulation of the mortgage market? Or is it of more limited importance, reflecting only the response of relatively affluent households to recent changes in the economic climate?

The answers to these questions turn on the reasons why the use of non-traditional sources of finance increased. There are a number of possible factors. The most important is likely

to be the dramatic rise in mortgage rates, which accelerated in 1980 and peaked in 1981. As a consequence, the wedge between the before-tax cost of mortgage interest payments and the after-tax return on personal saving widened sharply. Households with the financial resources had a strong incentive to either draw down their saving or arrange loans aainst their personal investments in stocks, bonds or other asets. High mortgage rates, coupled with high house prices, may have limited - more so than usual - the set of households both willing and able to purchase new detached homes to the affluent. More buyers may have had access to the proceeds of the sale of a previous home, as the demographic bulge associated with the "baby boom" enters the trade-up market.

A key question is whether the increased dependence on non-traditional finance, at least in this important market, is a temporary or a permanent phenomenon. To answer this question, it is necessary to identify the relative importance of the factors that underlie it. The mortgage and capital markets are now closely integrated, and lending institutions have shown a willingness to innovate in response to shifts in borrower preferences. It thus seems likely that those households which elected non-traditional sources of housing finance did so by choice rather than by default.

5. The Impact of Financial Deregulation

The Interim Report of the Ontario Task Force on Financial

Institutions has just been released, and the report of the federal committee on financial regulation (the MacLaren committee) is scheduled for release in mid-March. The motivation for both studies, in large part, is the intensification of pressures for deregulation. The enactment of Bill 75 in the Province of Quebec, which authorizes Quebec-chartered insurance companies to engage in a wide range of non-insurance activities, is indicative of pressures for legislative change. Product innovations have served to blur the distinctions between traditional financial institutions. Banks now offer discount brokerage services (Toronto Dominion's Greenline Investor Service) and brokerage firms offer chequing services on customers' cash balances (Midland Doherty's free credit balance chequing privileges).

Any major change in the regulation of financial institutions is likely to be in the direction of greater flexibility and increased competition, so as to promote the policy objective of improved efficiency. Because the mortgage market is already so closely integrated with the capital market, and because intense competition already exists among mortgage lenders, the potential for improved efficiency in this market may be limited. Indeed, the major impact on the mortgage market could arise from the more critical scrutiny in general of existing regulations. Two regulations that are likely to receive close scrutiny are (1) the requirement that lending institutions (except for credit unions and caisses populaires) insure

mortgages with loan-to-value ratios in excess of 75 percent, and (2) the limit on a bank's holding of conventional mortgages to no more than 10 percent of its assets.

The requirement that approved lenders insure high-ratio mortgage loans is, of course, premised on the existence of mortgage insurance. As noted, there exists considerable uncertainty regarding the future of the mortgage insurance industry in Canada. To the extent that lenders can achieve efficient diversification of default risk in their own mortgage portfolios, mortgage insurance serves only to repackage risk, not reduce it. However, as highlighted by the Interim Report of the Ontario Task Force, the solvency of financial institutions does remain a major concern of policy-makers.

There is a belief that deposit insurance has prompted excessive risk-taking on behalf of at least some financial institutions. Especially if the public perceives that all deposits are free of default risk, depositers have no incentive to monitor - and thus to discipline - the risk exposure of insured institutions. The retroactive insurance provided to the depositors of three financially troubled trust companies in Ontario highlights the importance of this issue. It may also provide a "back door" rationale for continuing to require financial institutions to insure high-ratio mortgage loans. It is possible that the fate of this regulation will be tied to the changes, if any, in store for deposit insurance.

The limit on bank holdings of conventional mortgages appears

to be a prime candidate for deregulation. If the banks are allowed more flexibility to compete in this market, this can only work to the advantage of the mortgage borrower.

There are, however, deregulation forces that could operate in the opposite direction. Pension fund managers are actively lobbying for the raising or the elimination of regulations that limit their foreign investments to 10 percent of their assets. If successful, this could lead to a reduced flow from this source of investment funds into the domestic mortgage market. Yet so long as the mortgage market is an integral part of the capital market, it is unlikely that the reduced flow of funds from any particular source should disadvantage mortgage borrowers.

6. The Forecast Decline in Housing Requirements

Existing projections prepared by the CMHC suggest that the required number of new housing starts will decline sharply over the next 10 to 15 years. (The need for renovation and repair of the existing stock will, however, increase.) These projections reflect a forecast decline in the rate of household formation, which is tied to both demographic and economic factors.

If the projected decline in housing requirements does occur, will the mortgage market be adversely affected? It seems hard to find the basis for such concern. Competition, already keen, is likely to become more intense, not less. If new starts do decline, activity in the resale market will generate a larger

fraction of the total demand for mortgage funds. This should pose no problem for the mortgage insurance industry, where penetration of the market for existing homes has typically exceeded that in the market for new homes. As the Canadian population ages, the number of housing units that are purchased outright might well increase, and the aggregate loan-to-value ratio for the housing stock might decline accordingly. Lenders may face increased demand for loans to finance repair, renovation and conversion of the existing housing stock. Yet if the mortgage market is an integral part of a well-functioning capital market, these developments should pose no major problems.

(ii) Overview

Real mortgage rates are likely to remain at historically high levels for at least another 5 years. If households presume that house prices will rise in line with the overall inflation rate, these high real rates should have a depressing impact on housing demand. The present environment is one in which borrowers and lenders alike are heavily influenced by the volatility of both house prices and interest rates. If inflation remains low and if the federal government makes visible progress in its attempts to reduce the deficit, this volatility should slowly diminish. Until this occurs, however, the risk of default will remain high. Borrowers who seek high-ratio loans will have to compensate lenders or insurers for this higher risk, in the form of higher rates on uninsured loans or higher

insurance premiums. Deregulation is likely to promote the already keen competition that prevails in the mortgage market, to the benefit of mortgage borrowers. There are no apparent problems for the mortgage market in the projected decline in the required number of new housing units.

The increased volatility of interest rates in recent years has served as the catalyst to a number of innovations in the mortgage market. One of the most important has been the move toward shorter term mortgages, including the variable rate mortgage. What types of innovation are likely to occur in the next decade, and what role might the government play in fostering such innovations?

The economic climate projected for the next decade is one in which real interest rates remain high. For long-term rates, this is due in large part to uncertainty regarding the future course of inflation. The indexed or real-term mortgage would appear to offer the greatest potential for lowering the effective cost of these mortgage funds. The federal government could try to expedite this innovation, by offering to insure indexed mortgages and to remove legal obstacles that might impede their introduction.

The economic climate projected for the next decade is also one in which interest rates may remain volatile, at least until governments in both Canada and the United States substantially reduce their deficits. To address this concern, a number of

proposals have been put forward to promote the development of long-term mortgages. The federal government has proposed making changes in the Interest Act to eliminate provisions that discourage lenders from offering long-term mortgages. The proposed introduction of mortgage-backed securities would also assist the development of a market for long-term mortgages. Spokesmen for the housing industry have suggested that buyers' confidence would be improved by the knowledge that their mortgage payments are fixed for a substantial period in the future. Yet because interest rates are volatile, a borrower who takes out a 10-year mortgage at a fixed interest rate would be exposed to substantial interest rate risk. If interest rates decline, the borrower suffers a large loss, either in the form of a prepayment penalty or continuing mortgage payments that reflect an above-market rate. If interest rates rise, the borrower benefits. These considerations, again, draw attention to the potential attractiveness of indexed mortgages.

Perhaps more importantly, the discussion of indexed mortgages draws attention to a more fundamental policy question. If the mortgage market is an integral part of an efficient capital market, is there a need for the government to try to promote financial innovation? As yet, borrowers have shown no interest in this new type of mortgage instrument. Further, there have been a large number of innovations in the mortgage market in recent years. To many, the presumption is that if the demand for a product exists at a commensurate price, then

the market will supply it. Economists and policy-makers alike, for example, may have overestimated the potential demand by borrowers for deferred interest mortgages. A like concern exists with regard to the government's initiative to provide mortgage rate insurance.

Table 1

Interest Rates, Inflation and Related Macroeconomic Variables, 1984-1995

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Nominal Interest Rates												
5-year conventional mortgages	12.83	13.08	11.45	10.41	9.95	9.91	9.59	9.40	9.15	9.01	8.93	8.87
Industrial bonds	14.28	14.31	13.01	12.44	12.05	11.73	11.41	11.30	11.19	10.97	10.69	10.37
90-day paper	11.63	11.88	10.25	9.21	8.75	8.71	8.39	8.20	7.95	7.81	7.73	7.67
Percentage change in consumer price index	2.90	3.03	3.16	3.34	3.54	3.76	4.00	4.26	4.53	4.83	5.14	5.48
Implied Real Interest Rates												
5-year conventional mortgages	9.93	10.05	8.29	7.07	6.41	6.15	5.59	5.14	4.62	4.18	3.79	3.39
Industrial bonds	11.38	11.28	9.85	9.10	8.51	7.97	7.41	7.04	6.66	6.14	5.55	4.89
90-paper	8.73	8.85	7.09	5.87	5.21	4.95	4.39	3.94	3.42	2.98	2.59	2.19
Federal government balance (National Accounts Basis, in billions of current dollars)	-28.4	-29.7	-28.7	-27.1	-23.6	-23.1	-21.6	-20.7	-19.0	-16.7	-14.0	-10.1
Growth Rate of Real GNP	3.99	2.86	2.89	3.58	3.59	3.40	2.86	1.88	2.27	2.65	2.41	2.63
Unemployment Rate	11.39	10.73	10.63	10.14	9.36	8.92	8.86	8.97	9.01	8.82	8.61	8.50

Source: Peter Dungan, Mary MacGregor and Andre Plourde, "National Projection Through 1995," Policy and Economic Analysis Policy Study No. 84-5, Institute for Policy Analysis, University of Toronto, December 1984. The projections for the 5-year conventional mortgage rate, constructed by the present author, reflect the average historical spread of 1.20% between the rate and the 90-day paper rate.

Table 2

Historical Interest Rate and Inflation Data, 1954-1983

	Nominal Interest Rates			Real Interest Rates	
	5-year conventional mortgage	90-day paper	Inflation[a]	5-year conventional mortgage	90-day paper
1954	6.01	-	0.62	5.39	-
1955	5.88	-	0.15	5.73	-
1956	6.22	3.73	1.49	4.73	2.24
1957	6.85	5.25	3.14	3.71	2.11
1958	6.80	3.16	2.60	4.20	0.56
1959	6.97	5.18	1.14	5.83	4.03
1960	7.18	4.00	1.26	5.91	2.73
1961	7.00	3.37	0.96	6.04	2.41
1962	6.97	4.38	1.21	5.76	3.17
1963	6.97	4.01	1.66	5.31	2.34
1964	6.96	4.20	1.82	5.15	2.38
1965	7.02	5.02	2.46	4.56	2.56
1966	7.66	6.27	3.73	3.93	2.54
1967	8.07	5.84	3.64	4.42	2.20
1968	9.07	6.83	4.02	5.05	2.81
1969	9.83	7.85	4.50	5.34	3.35
1970	10.44	7.34	3.38	7.07	3.96
1971	9.43	4.51	2.80	6.63	1.71
1972	9.21	5.10	4.82	4.39	0.28
1973	9.59	7.45	7.61	1.98	-0.16
1974	11.24	10.50	10.89	0.34	-0.38
1975	11.43	7.94	10.78	0.64	-2.85
1976	11.78	9.17	7.51	4.27	1.66
1977	10.36	7.47	8.01	2.35	-0.53
1978	10.59	8.83	8.90	1.70	-0.66
1979	11.98	12.07	9.15	2.82	2.91
1980	14.32	13.15	10.17	4.14	2.98
1981	18.15	18.33	12.47	5.68	5.87
1982	17.89	14.15	10.79	7.09	3.36
1983	13.29	9.45	5.81	7.48	3.63

Source: Bank of Canada Review, various issues.

Notes: [a] Inflation is measured by the year-over-year percentage change in the average level of the consumer price index in each year.

[b] Real interest rate is calculated simply as the difference between the nominal interest rate and the rate of inflation in that year.